



## INSTRUCTION MANUAL

**COLOR CCD CAMERA**  
**B/W CCD CAMERA**

This Instruction Manual applies to the following six models.

### **SURFACE TYPE**

**VDC-C1074VA (Color High Resolution)**

**VDC-C1024V (Color Standard)**

**VDC-M1024V (Black & White)**

### **IN-CEILING TYPE**

**VDC-C2074VA (Color High Resolution)**

**VDC-C2024V (Color Standard)**

**VDC-M2024V (Black & White)**

### ● **CONTENTS**

<b>INFORMATION TO USER.....</b>	<b>1</b>
<b>PRECAUTIONS.....</b>	<b>2</b>
<b>INSTALLATION.....</b>	<b>3</b>
<b>ADJUSTMENT.....</b>	<b>4, 5</b>
<b>SPECIFICATIONS.....</b>	<b>6</b>

### ● **INCLUDED ACCESSORY**

Hexagonal Wrench ..... 1 pc.

### **About this manual**

- Before installing and using the camera, please read this manual carefully. Be sure to keep it handy for later reference.

## INFORMATION TO USER

### *Safety Guard*



THIS SYMBOL INDICATES THAT THERE ARE IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THIS UNIT.

#### **WARNING:**

**TO PREVENT THE RISK OF FIRE OR ELECTRIC SHOCK , DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE UNLESS CLOSED AND SEALED.**

#### **For customers in Canada**

This Class B digital apparatus complies with Canadian ICES-003.

#### **Pour la clientèle Canadienne**

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.

This installation should be made by a qualified service person and should conform to all local codes.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by **Sanyo** may void the user's authority to operate this camera.

## PRECAUTIONS

### ■ In case of problem

Do not use the camera if smoke or a strange odour comes from the unit, or if it seems not to function correctly. Disconnect the power cord immediately, and consult your dealer (or a Sanyo Authorized Service Centre).

### ■ Do not open or modify

Do not open the cabinet, as it may be dangerous and cause damage to the unit. For internal settings and repairs, consult your dealer (or a Sanyo Authorized Service Centre).

### ■ Do not put objects inside the unit

Make sure that no metal objects or flammable substance get inside the camera. If used with a foreign object inside, it could cause a fire, short-circuits or damages.

If water or a liquid gets inside the camera, disconnect the power cord immediately, and consult your dealer (or a Sanyo Authorized Service Centre). Be careful to protect the camera from rain, sea water, etc.

### ■ Be careful when handling the unit

To prevent damages, do not drop the camera or subject it to strong shock or vibration.

### ■ Install away from electric or magnetic fields

If installed close to a TV, radio transmitter, magnet, electric motor, transformer, or audio speakers the magnetic field they generate will distort the image.

### ■ Protect from humidity and dust

To prevent damage to the camera, do not install it where there is greasy smoke or steam, where the dampness may get too high, or where there is a lot of dust.

### ■ Protect from high temperatures

Do not install close to stoves, or other heat generating devices, such as spotlights, etc., or where it could be subject to direct sunlight, as that could cause deformation, discoloration or other damage.

Be careful when installing close to the ceiling, in a kitchen or boiler room, as the temperature may rise to high levels.

Install where the temperature range will stay between  $-10^{\circ}\text{C}$  and  $50^{\circ}\text{C}$ . (no condensation)

### ■ Cleaning

Dirt can be removed from the housing by wiping it with a soft cloth. To remove stains, wipe with a soft cloth moistened with a soft detergent solution and wrung dry, then wipe dry with a dry soft cloth.

Do not use benzine, thinners or other chemical products on the housing, as they may cause deformation and paint peeling. Before using a chemical cloth, make sure to read all accompanying instructions. Make sure that no plastic or rubber material comes in contact with the housing for a long period of time, as that may cause damage or paint peeling.

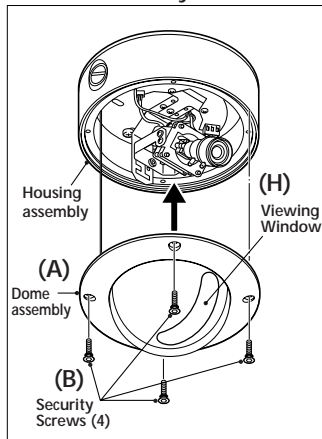
### ■ Mounting Surface

The mounting surface material must be strong enough to secure the camera.

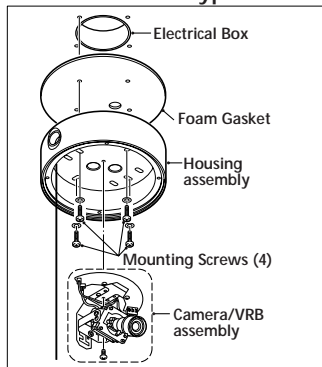
Plaster- board without a backing plate is not recommended.

# INSTALLATION

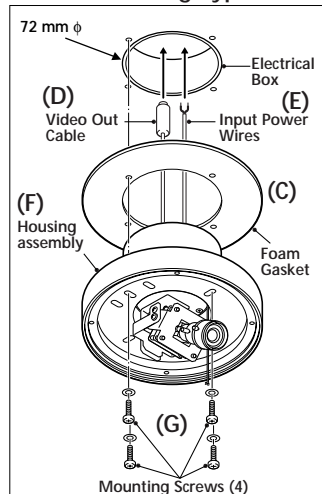
## Dome assembly installation



## Surface Type



## In-ceiling Type



## Main unit installation

### Preparation

Make four or more holes in the ceiling or wall for the screws that are to be used to secure the main unit. If embedding the input power wire and video out cable, make a hole for these cables to be passed through also.

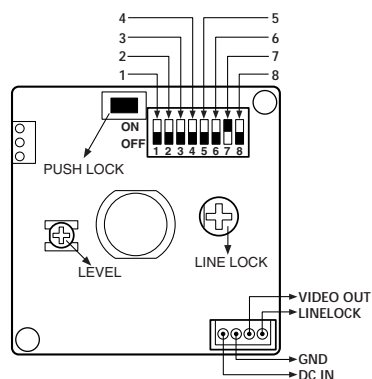
### Main unit installation

- 1 Use the accessory Allen key to remove the four screws (B) that are securing the dome assembly (A).
- 2 Insert the foam gasket (C) in between the housing and the installation surface.
- 3 Pass the input power wire (E) and video out cable (D) through the hole made for that purpose.
- 4 Align the housing assembly (F) with the screw holes that have been prepared, and then secure it by tightening the four or more screws (G) (4 mm diameter screws recommended).
- 5 Determine the lens position in accordance with the location of the objects to be viewed, and then tighten it in that position. (Refer to page 4 for lens adjustment details.)
- 6 Align the viewing window (H) with the lens position.
- 7 Return the dome assembly (A) to its original position and secure it.

\* (E) Input power wires: Dual voltage system (12 V DC or 24 V AC 60 Hz)

## ADJUSTMENT

■ These adjustments are for color cameras.



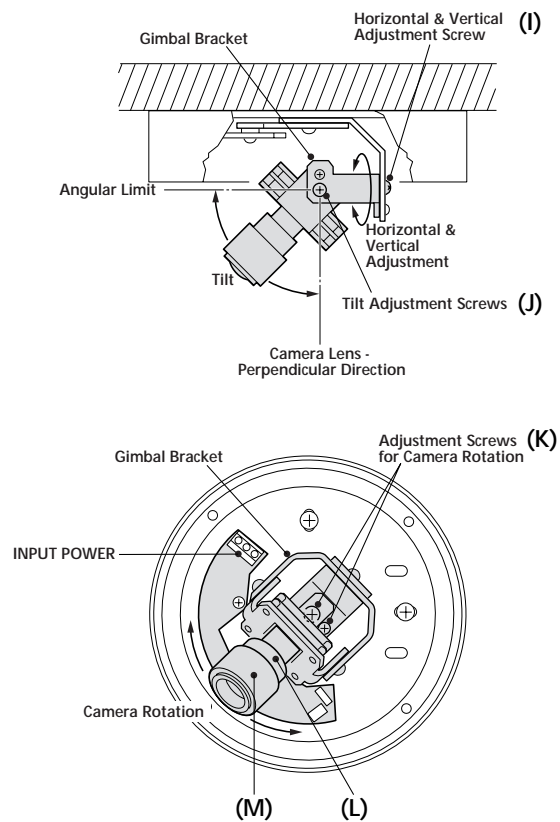
- The switch positions in the above figure are the factory presets for the color standard model.  
(For color high resolution model, the factory setting position of MIRIS (3) is **ON**.)
- B/W cameras have the same variable resistor (V. R.) for Line lock and Level as the color cameras.

ADJUSTMENTS	DIP SWITCH							
	1	2	3	4	5	6	7	8
FLICKERLESS ON (1/100 sec.)	ON							
FLICKERLESS OFF (1/60 sec.)	OFF							
BACKLIGHT COMPENSATION OFF		ON						
BACKLIGHT COMPENSATION ON		OFF						
MECHANICAL IRIS			ON					
ELECTRONIC IRIS			OFF					
120 IRE USER SETTING				ON				
100 IRE SETTING				OFF				
AGC 26 dB MAXIMUM					ON			
AGC 20 dB MAXIMUM					OFF			
AUTO TRACKING WHITE BALANCE						OFF	OFF	OFF
AUTO WHITE BALANCE						OFF	ON	OFF
PUSH LOCK						OFF	ON	ON
INDOOR (3200° K)						ON	OFF	OFF
OUTDOOR (6500° K)						ON	ON	ON
4200° K						ON	OFF	ON
4700° K						ON	ON	OFF
LINE LOCK	Use the V. R. to adjust if the TV monitor synchronization is unsteady.							
LEVEL	Use the V. R. to adjust if the backlight compensation is set to on but compensation is still not correct.							

- PUSH LOCK MODE: If the push lock switch is pressed, White Balance will be adjusted automatically.

## ADJUSTMENT

### ■ Lens adjustment



#### (I) Horizontal & Vertical Adjustment Screw

#### (J) Tilt Adjustment Screw

#### (K) Pan Adjustment Screw

#### (L) Zoom ring

To adjust the zoom, loosen the zoom ring knob and then turn the ring to the T side (to enlarge objects) or to the W side (to reduce objects). Then tighten the knob.

#### (M) Focus ring

To adjust the focus, loosen the focus ring knob, turn the focus ring to the  $\infty$  side or to the N side to make the adjustment, and then tighten the knob.

## SPECIFICATIONS

<b>TV format</b>	: Compatible with NTSC TV format	<b>Operating environment</b>	: Temperature -10°C – +50°C Humidity 90% RH or less
<b>Scanning method</b>	: 525 TV lines, 60 fields/sec., 2:1 interlaced	<b>Storage environment</b>	: Temperature -20°C – +60°C Humidity 70% RH or less
<b>Capturing element</b>	: Interline transmission method, 1/3 inch CCD fixed capturing element	<b>Power voltage/ Power consumption (Approx.)</b>	: 12 V DC or 24 V AC/60 Hz 2.5 W (VDC-M2024V, VDC-M1024V) 3.5 W (VDC-C2024V, VDC-C1024V) 4.2 W (VDC-C2074VA, VDC-C1074VA)
<b>Effective picture element</b>	: 379 K (VDC-C2074VA, VDC-C1074VA) 250 K (VDC-C2024V, VDC-C1024V, VDC-M2024V, VDC-M1024V)	<b>Weight (Approx.)</b>	: 1.45 kg (VDC-M1024V) 1.5 kg (VDC- C1024V, VDC- C1074VA) 1.15 Kg (VDC- M2024V) 1.2 kg (VDC- C2024V, VDC- C2074VA)
<b>Synchronization method</b>	: Internal sync or line lock	<b>Dimensions</b>	: Surface type 153.5 (W) x 103.3 (H) mm, Dome 102 mm $\phi$ 6.04 (W) x 4.07 (H) inch, Dome 4.02 inch $\phi$  In-ceiling type 153.5 (W) x 121.8 (H) mm, Dome 102 mm $\phi$ 6.04 (W) x 4.80 (H) inch, Dome 4.02 inch $\phi$
<b>Horizontal resolution</b>	: 460 TV lines (VDC-C2074VA, VDC-C1074VA) 380 TV lines (VDC-M2024V, VDC-M1024V) 330 TV lines (VDC-C2024V, VDC-C1024V)		
<b>Video signal output</b>	: 1.0 Vp-p/75 $\Omega$ (BNC termination)		
<b>S/N ratio</b>	: 50 dB (VDC-M2024V, VDC-M1024V) 48 dB (VDC-C2074VA, VDC-C1074VA, VDC-C2024V, VDC-C1024V)		
<b>Minimum object illumination (50IRE)</b>	: 0.2 Lux (VDC-M2024V, VDC-M1024V) 2.0 Lux (VDC-C2024V, VDC-C1024V) 3.0 Lux (VDC-C2074VA, VDC-C1074VA)		
<b>White balance (color only)</b>	: Indoor/outdoor/push lock selectable manually		
<b>Backlight compensation (BLC) function</b>	: ON/OFF selectable manually, center focus separate photometry method B/W cameras: ON fixed		
<b>Backlight compensation iris level adjustment:</b>	: Manual V. R.		
<b>Flickerless function:</b>	: ON/OFF selectable manually B/W cameras: None		
<b>Gain control:</b>	: Selectable manually		
<b>Built-in lens:</b>	: Variable focal lens F2.0 – 2.8, f= 4 – 8 mm		
<b>Manual angle of field adjustment function</b>	: Horizontal (pan) $\rightarrow$ 360°, Vertical (tilt) $\rightarrow$ 80°		
<b>Drip prevention structure</b>	: Simplified		

L5QA2/US, US2, L5QB2/US, US2, L7QA2/US, US2 GB 2002, 4, 24

**SANYO INDUSTRIAL VIDEO  
COLOR VIDEO CAMERA LIMITED WARRANTY**

**OBLIGATIONS**

In order to obtain warranty service, the product must be delivered to and picked up from an Authorized Sanyo Service Center at the user's expense, unless specifically stated otherwise in this warranty. The names and addresses of Authorized Sanyo Service Centers may be obtained by calling the toll-free number listed below.

For product operation, authorized service center referral, service assistance or problem resolution, call

**CUSTOMER INFORMATION 1-800-421-5013**

**Weekdays 8:30 AM – 5:00 PM Pacific Time**

For accessories and/or parts, call

**PARTS ORDER INFORMATION 1-800-726-9662**

**Weekdays 8:30 AM – 5:00 PM Pacific Time**

THIS WARRANTY IS VALID ONLY ON SANYO PRODUCTS PURCHASED OR RENTED IN THE UNITED STATES OF AMERICA, EXCLUDING ALL U.S. TERRITORIES AND PROTECTORATES. THIS WARRANTY APPLIES ONLY TO THE ORIGINAL RETAIL PURCHASER OR END-USER. THE ORIGINAL DATED BILL OF SALE, SALES SLIP OR RENTAL AGREEMENT MUST BE SUBMITTED TO THE AUTHORIZED SANYO SERVICE CENTER AT THE TIME WARRANTY SERVICE IS REQUESTED.

Subject to the OBLIGATIONS above and EXCLUSIONS below, SANYO Fisher Company warrants this SANYO product against defects in materials and workmanship for the periods specified below. SFC will repair or replace (at its option) the product and any of its parts which fail to conform to this warranty. The warranty period commences on the date the product was first purchased or rented at retail.

LABOR	PARTS	IMAGE DEVICE
3 YEARS	3 YEARS	3 YEARS

**EXCLUSIONS**

This warranty does not cover (A) the adjustment of customer-operated controls as explained in the appropriate model's instruction manual, or (B) the repair of any product whose serial number has been altered, defaced or removed.

This warranty shall not apply to the cabinet or cosmetic parts, batteries or routine maintenance.

This warranty does not apply to uncrating, setup, installation, removal of the product for repair or reinstallation of the product after repair.

This warranty does not apply to repairs or replacements necessitated by any cause beyond the control of SFC including, but not limited to, any malfunction, defect or failure caused by or resulting from unauthorized service or parts, improper maintenance, operation contrary to furnished instructions, shipping or transit accidents, modification or repair by the user, abuse, misuse, neglect, accident, incorrect power line voltage, fire, flood or other Acts of God, or normal wear and tear.

The foregoing is in lieu of all other expressed warranties and SFC does not assume or authorize any party to assume for it any other obligation or liability.

SFC DISCLAIMS ALL OTHER WARRANTIES EXPRESS OR IMPLIED, WITH REGARD TO THIS PRODUCT (INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS). IN NO EVENT SHALL SFC BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM THE OWNERSHIP OR USE OF THIS PRODUCT OR FOR ANY DELAY IN THE PERFORMANCE OF ITS OBLIGATIONS UNDER THIS WARRANTY DUE TO CAUSES BEYOND ITS CONTROL. SFC'S LIABILITY FOR ANY AND ALL LOSSES AND DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER, ARISING OUT OF OR IN CONNECTION WITH THE SALE, USE OR OWNERSHIP OF THIS PRODUCT INCLUDING WARRANTOR'S NEGLIGENCE, ALLEGED DAMAGED OR DEFECTIVE GOODS, WHETHER SUCH DEFECTS ARE DISCOVERABLE OR LATENT, SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE PRODUCT.

**ATTENTION**

For your protection in the event of theft or loss of this product, please fill in the information below for your own personal records.

**Model No.** \_\_\_\_\_

**Serial No.** \_\_\_\_\_

(Located on back or bottom side of unit.)

**Date of Purchase** \_\_\_\_\_

**Purchase Price** \_\_\_\_\_

**Where Purchased** \_\_\_\_\_

**SANYO**

**21605 Plummer Street,  
Chatsworth, California 91311**  
Printed in Korea

1AC6P1P2547--  
L5QA2/US, US2, L5QB2/US, US2, L7QA2/US, US2 (0402KP-CZ)